
**Draft Project plan for the
CENELEC Workshop on
InComEss “INnovative polymer-
based COmposite systeMs for
high-efficient Energy
Scavenging and Storage”**

**Requests to participate in the Workshop
and/or comments on the project plan are
to be submitted by 2023-12-31 to
camartin@une.org¹**

Recipients of this project plan are kindly requested to name all patent rights known to them to be relevant to the Workshop and to make available all supporting documents.

Madrid, 2023-11-13 (Version 1)

¹ Applications for participating in the Workshop and comments on the project plan that are not received by the deadline do not need to be taken into consideration. Once constituted, the Workshop will decide whether or not to consider the comments received in good time.

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Summary

This workshop is motivated by the currently ongoing Horizon 2020 InComEss project whose objective is to develop efficient smart materials with energy harvesting and storage capabilities combining advanced polymer based-composite materials into a novel single/multi-source concept to harvest electrical energy from mechanical energy and/or waste heat ambient sources.

In line with the sustainable approach of the project, an evaluation of the recyclability of the novel and most valuable materials and components has been carried out using a series of separation and recycling techniques based on mechanical, thermal and chemical processes.

This CENELEC workshop will be used to develop a CWA closely connected to this InComEss objective in order to disseminate the different material recyclability solutions evaluated within the project and thus promote their future market acceptance.

1 Status of the project plan

Draft project plan for public commenting (Version 1.0)

This draft project plan is intended to inform the public of a new Workshop. Any interested party can take part in this Workshop and/or comment on this draft project plan. Please send any requests to participate or comments by e-mail to camartin@une.org.

All those who have applied for participation or have commented on the project plan by the deadline will be invited to the kick-off meeting of the Workshop on 2024-01-11.

Approved project plan for CWA development adopted at the kick-off meeting of the Workshop on 2024-01-11 (Version 1).

2 Workshop proposer and Workshop participants

2.1 Workshop proposer

<u>Person or organisation</u>	<u>Short description and interest in the subject</u>
InComEss Project (European Union's Horizon 2020 research and innovation programme under Grant Agreement No.862597) Cintia Mateo Mateo, PhD (InComEss Coordinator)	InComEss seeks at developing efficient smart materials with energy harvesting and storage capabilities combining advanced polymer based-composite materials into a novel single/multi-source concept to harvest electrical energy from mechanical energy and/or waste heat ambient sources. The aim of the developed energy harvesting systems is to power selected wireless sensors nodes to be implemented in different IoT scenarios for structural health monitoring in buildings and aircrafts and accurate location and monitoring of vehicles.

2.2 Other potential participants

This CWA will be developed in a Workshop (temporary body) that is open to any interested party. The participation of other experts would be helpful and is desired. It is recommended that:

- Industry and commerce stakeholders

take part in the development of this CWA.

2.3 Participants at the kick-off meeting

The list of participants is not completely definitive. The following persons or organizations are expected to register for the kick-off meeting and actively participate in the development of the CWA.

<u>Person</u>	<u>Organisation</u>
<u>Workshop proposer</u> Cintia Mateo (InComEss Coordinator)	<u>Workshop proposer</u> AIMEN Centro Tecnológico
María Blecua de Pedro Franco di Persio Ana Cecilia Chaine	Fundación CIRCE Centro Tecnológico
Thomas Daue	Smart Material GmbH
Petra Pötschke Beate Krause Ezgi Inci	Leibniz-Institut für Polymerforschung Dresden e.V.
Matti Mäntysalo Jari Keskinen Timo Punkari	Tampere University
Amanda Melo David Esteves	CENTITVC Centro de Nanotecnologia e Materiais Técnicos Funcionais e Inteligentes
<u>Workshop secretariat</u> Carmen Martín Marino	<u>Workshop secretariat</u> UNE, Spanish Association for Standardization

2.4 Registered Workshop participants

The following persons or organisations have registered as Workshop participants at the kick-off meeting and will actively participate in the development of the CWA. More persons and organizations included in 2.3 are expected to register.

<u>Person</u>	<u>Organisation</u>
<u>Workshop Chair</u> María Blecua de Pedro	<u>Workshop Chair</u> Fundación CIRCE Centro Tecnológico
Cintia Mateo (InComEss Coordinator)	AIMEN Centro Tecnológico

<u>Workshop secretariat</u> Carmen Martín	<u>Workshop secretariat</u> UNE, Spanish Association for Standardization

3 Workshop objectives and scope

3.1 Background

This workshop is motivated by the currently ongoing Horizon 2020 InComEss project whose objective is to develop efficient smart materials with energy harvesting and storage capabilities combining advanced polymer based-composite materials into a novel single/multi-source concept to harvest electrical energy from mechanical energy and/or waste heat ambient sources. The aim of the developed energy harvesting systems is to power selected wireless sensors nodes to be implemented in different IoT scenarios for structural health monitoring in buildings and aircrafts and accurate location and monitoring of vehicles.

The materials used in InComEss for energy harvesting and storage have been selected to be non-toxic, recyclable and not scarce. In line with the sustainable approach of the project, an evaluation of the recyclability of the novel and most valuable materials and components has been carried out using a series of separation and recycling techniques based on mechanical, thermal and chemical processes. The nature of the materials developed in the project, based mainly on polymeric compounds, has driven the search for the best recycling techniques towards these processes compared to those used in industrial WEEE treatment facilities, which have been considered not suitable in this case.

Having in mind that the recycling and reuse of these new components is vital due to the increasing material demand and the resource depletion, this CENELEC workshop will be used to develop a CWA closely connected to this InComEss objective in order to disseminate the different material recyclability solutions evaluated within the project and thus promote their future market acceptance.

3.2 Scope

The purpose of the planned Workshop is to develop a CENELEC Workshop Agreement that compiles the best practices identified for the recovery of novel and high-value materials from end-of-life energy harvesting devices used for IoT and wireless sensor networks.

The CWA is applicable to recoverable materials and components considered of interest based on the design and composition of the energy harvesting systems developed in the InComEss project: PVDF, silver electrodes, polyimide, fiberglass/resin composite, copper, SWCNT, polymeric matrices, CNT, Aluminium, PET and carbon particles.

3.3 Related activities

The subject of the planned CWA is not at present the subject of a standard. However, there are two committees that deal with related subjects and thus need to be taken into account - and involved, where necessary - during this Workshop:

- CLC/TC 111X, Environment
- IEC/TC 111, Environmental standardization for electrical and electronic products and systems

4 Workshop programme

4.1 General

The kick-off meeting is planned to take place online on 2024-01-11. A total of 3 virtual Workshop meetings (kick-off meeting and Workshop meetings) and web conferences will be held, during which the content of the CWA(s) will be presented, discussed and approved.

The CWA will be drawn up in English (language of meetings, minutes, etc.). The CWA will be written in English.

4.2 Workshop schedule

Table 1: Workshop schedule (preliminary)

CEN/CENELEC Workshop	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	...
Initiation							
1. Proposal form submission and TC response							
2. Project plan development							
3. Open commenting period on draft project plan (mandatory)							
Operation							
4. Kick-off meeting							
5. CWA(s) development							
7. CWA(s) finalised and approved by Workshop participants							
Publication							
8. CWA(s) publication							
Dissemination (see 7)							
Milestones			K	V	V	V / A	P D

- B** CEN/CENELEC BT meeting deciding on establishment of a CEN/CENELEC Workshop
- K** Kick-off
- V** Virtual Workshop meeting
- A** Adoption of CWA
- P** Publication of CWA
- D** Online distribution of CWA

5 Resource planning

The administrative costs of this CENELEC Workshop will be covered by resources from InComEss project. Therefore, the final document will include the following paragraph: "Results incorporated in this CENELEC Workshop Agreement have received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement Number 862597".

Registration and participation in this CENELEC Workshop are free of charge. Virtual meetings will be preferred. Nevertheless, if any face-to-face meeting is necessary, it will be held in Europe and each participant will have to cover his/her own travel, accommodation and subsistence expenses.

6 Workshop structure and rules of cooperation

6.1 Participation in the Workshop

The Workshop will be constituted during the course of the kick-off meeting. By approving this project plan, the interested parties declare their willingness to participate in the Workshop and will be formally named as Workshop participants, with the associated rights and duties. Participants at the kick-off meeting who do not approve the project plan are not given the status of a Workshop participant and are thus excluded from further decisions made during the kick-off meeting and from any other decisions regarding the Workshop.

As a rule, the request to participate in the Workshop is closed once it is constituted. The current Workshop participants shall decide whether any additional members will be accepted or not.

Any new participant in the Workshop at a later date is decided on by the participants making up the Workshop at that time. It is particularly important to consider these aspects:

- a. expansion would be conducive to shortening the duration of the Workshop or to avoiding or averting an impending delay in the planned duration of the Workshop;
- b. the expansion would not result in the Workshop taking longer to complete;
- c. the new Workshop participant would not address any new or complementary issues beyond the scope defined and approved in the project plan;
- d. the new Workshop participant would bring complementary expertise into the Workshop in order to incorporate the latest scientific findings and state-of-the-art knowledge;
- e. the new Workshop participant would actively participate in the drafting of the manuscript by submitting concrete, not abstract, proposals and contributions;
- f. the new Workshop participant would ensure wider application of the CWA.

All Workshop participants who voted for the publication of the CWA or its draft will be named as authors in the European Foreword, including the organisations which they represent. All Workshop participants who voted against the publication of the CWA, or who have abstained, will not be named in the European Foreword.

6.2 Workshop responsibilities

The Workshop Chair is responsible for content management and any decision-making and voting procedures. The Workshop Chair is supported by the Workshop Vice-Chair and the responsible Workshop secretariat, whereby the Workshop secretariat will always remain neutral regarding the content of the CWA(s). Furthermore, the Workshop secretariat shall ensure that CEN-CENELEC's rules of procedure, rules of presentation, and the principles governing the publication of CWA(s) have been observed. Should a Workshop Chair no longer be able to carry out her/his duties, the Workshop secretariat shall initiate the election of a new Workshop Chair. The list below covers the main tasks of the Workshop Chair. It is not intended to be exhaustive.

- Content related contact point for the Workshop
- Presides at Workshop meetings
- Ensures that the development of the CWA respects the principles and content of the adopted project plan
- Manages the consensus building process, decides when the Workshop participants have reached agreement on the final CWA, on the basis of the comments received
- Ensures due information exchange with the Workshop secretariat
- Represents the Workshop and its results to exterior

The Workshop secretariat, provided by a CEN/CENELEC national member, is responsible for organising and leading the kick-off meeting, in consultation with the Workshop proposer. Further Workshop meetings and/or web

conferences shall be organised by the Workshop secretariat in consultation with the Workshop Chair. The list below covers the main tasks of the Workshop secretariat. It is not intended to be exhaustive.

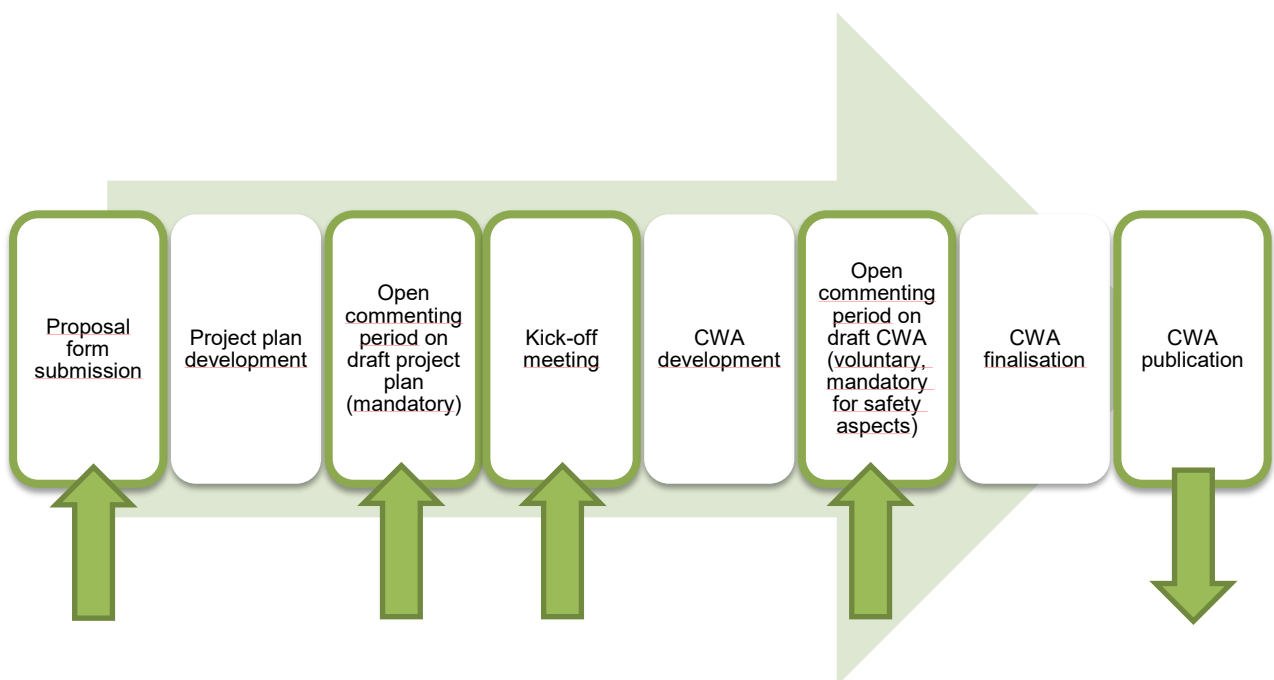
- Administrative and organisational contact point for the Workshop
- Ensures that the development of the CWA respects the principles and content of the adopted project plan and of the requirements of the CEN-CENELEC Guide 29
- Formally registers Workshop participants and maintains record of participating organisations and individuals
- Offers infrastructure and manage documents and their distribution through an electronic platform
- Prepares agenda and distribute information on meetings and meeting minutes as well as follow-up actions of the Workshop
- Initiates and manage CWA approval process upon decision by the Workshop Chair
- Interface with CEN-CENELEC Management Centre (CCMC) and Workshop Chair regarding strategic directions, problems arising, and external relationships
- Advises on CEN-CENELEC rules and bring any major problems encountered (if any) in the development of the CWA to the attention of CEN-CENELEC Management Centre (CCMC)
- Administrates the connection with relevant CEN or CENELEC/TCs

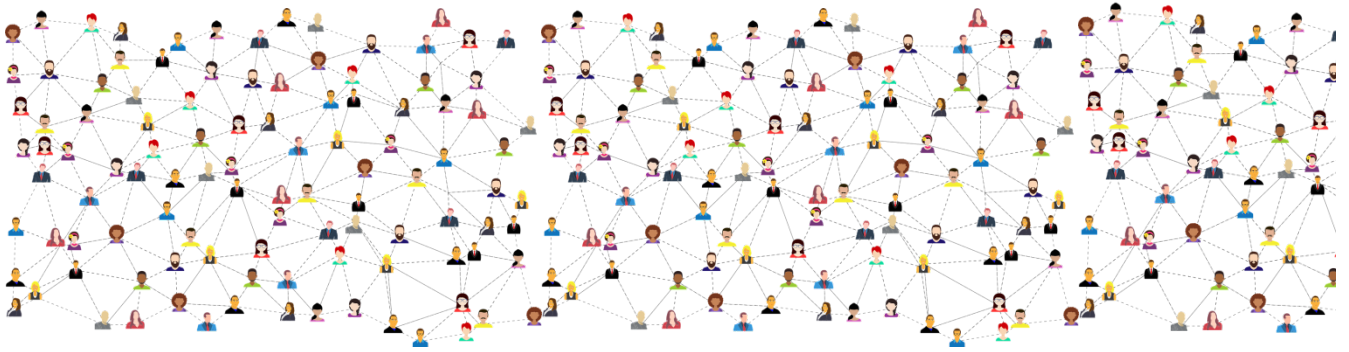
6.3 Decision making process

Each Workshop participant is entitled to vote and has one vote. If an organisation sends several experts to the Workshop, that organisation has only one vote, regardless of how many Workshop participants it sends. Transferring voting rights to other Workshop participants is not permitted. During voting procedures, decisions are passed by simple majority; abstentions do not count.

If Workshop participants cannot be present in the meetings when the CWA or its draft is adopted, an alternative means of including them in the voting procedure shall be used.

7 Dissemination and participation strategy





Proposal form submission

The Workshop proposal will be disseminated to the following relevant stakeholders and bodies for information:

- CLC/TC 111X, Environment
- IEC/TC 111, Environmental standardization for electrical and electronic products and systems

Open commenting period on draft project plan

The project plan will be disseminated to the following relevant stakeholders and bodies for commenting:

- CLC/TC 111X, Environment
- IEC/TC 111, Environmental standardization for electrical and electronic products and systems

In addition to the CCMC website, the project plan and the date of the kick-off meeting will be advertised on social media and communication channels of InComEss project to raise awareness. Interested parties are requested to contribute either through commenting of the project plan (short term) or through Workshop participation (long term).

CWA publication

The final CWA will be disseminated to the following relevant stakeholders and bodies:

- CLC/TC 111X, Environment
- IEC/TC 111, Environmental standardization for electrical and electronic products and systems

In addition to the CCMC website, the final CWA will be advertised on InComEss:

- website (<https://www.incomess-project.com/>)
- social media (LinkedIn, Twitter)
- newsletter
- partners websites

8 Contacts

- Workshop Chair:

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- Workshop Secretariat:

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- Workshop proposer

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